UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,788	06/29/2001	Marcos Nogueira Novaes	YOR920010316US1	4582

48150	7590	03/25/2005	

MCGINN & GIBB, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER
TRAN, QUOC A

ART UNIT	PAPER NUMBER
2176	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="3">Office Action Summary</td><td>Application No.
09/893,788</td><td>Applicant(s)
NOVAES, MARCOS NOGUEIRA</td></tr>
<tr><td>Examiner
Quoc A. Tran</td><td>Art Unit
2176</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _29 June 2001_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-31_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-23_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _04/22/04&09/27/04_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to Amendment A, filed 12/16/2004.

2.   Claims 1-31 are currently pending in this application. Applicant elected the

invention of Group 1, which is claims 1-23, without traverse. Claim 1 is an independent

claim.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> **Whoever invents or discovers any new and useful process, machine,
> manufacture, or composition of matter, or any new and useful improvement
> thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.**

Claims 1-23, are rejected under 35 U S.C. 101 because the claimed invention is

directed merely to an abstract idea that is not tied to a technological art, environment or

machine which would result in a practical application producing a concrete, useful, and

tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Further

more the claimed invention is not embodied on a computer readable medium, nor are

the "executable instructions" explicitly recited as being carried out, or functionally tied in,

to a computer environment as recited in the preambles of claims 1-23, " *A method of

navigating data blocks, comprising: ...*". Therefore, the claims read on a mental

construct/abstract idea or at best a computer program, per se.

Further, to expedite a complete examination of the instant application the claims

rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth

below in anticipation of applicant amending these claims to place them within the four

statutory categories of invention.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out
> and distinctly claiming the subject matter which the applicant regards as his
> invention.

Claims 8-10 and 11-14 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. Evidence that Claim 8 recites the limitation

"...determining whether an index record i is less than a number M of blocks in the

database and if so setting a number j to 0 ", in page 44, last paragraph, which are failing

to particularly point out and distinctly claim the subject matter (i.e. for example, i is an

index record, what is j? Applicant recited the value of j is setting to 0, but fail to point out

what is j?). Clarification and/or correction are required.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 1-7, 15-16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrizo US 20030009467A1- provisional No. 60/234,050 - filed 09/20/2000 – (hereinafter '467), in view of Ridgley US006583800B1 - filed 07/14/1999 – (hereinafter '800).

In regard to independent claim 1, *"opening a first data block of a plurality of data blocks of interest, said plurality of data blocks being spatially indexed in N dimensions"*, as taught by '467 page 1, paragraphs [0006]-[0007] and also see Figure 6 sheet 3 of 11 of Drawing (i.e...The data to be organized is preferably in the form of an n-dimensional array of binary data where the binary data is comprise of bits that are identified by a bit position within the n-dimensional array...data is structured by dividing each of the files containing the binary data into quadrants according to the bit position identification and recording the count of 1-bits for each quadrant on a first level. Then, recursively dividing each of the quadrants into further quadrants and recording the count of 1-bits for each quadrant until all quadrants comprise a pure-1 quadrant or a pure-0 quadrant to form a basic tree structure. This structure is similar to other quadrant tree structures but for individual bit positions within values rather than the values themselves...),

" and accessing a second data block of said second plurality of data blocks which is viewed to be closest to said first data block", as taught by '467 page 18, paragraphs [0226], [0222]-[0225] and [229] (i.e... Incremental ANDing of PC-trees produces immediate and incrementally improving upper/lower bounds for counts... PC-trees contain 1-count for every quadrant of every dimension (they are data-mining ready)...

any sub-quadrant at any level is simple to extract (it need not be rebuilt)... PC-trees can

be combined to produce any needed data structure, including the original data... K-

nearest neighbor (KNN) classification method, the k-nearest neighbors (under some

distance metric), of the sample to be classified, are found by scanning the entire data

set),

"…. a closeness relationship between said first data block opened and a second

plurality of data blocks based on their content", as taught by '467 at page 18,

paragraphs [0226], [0222]-[0225] and [229] (i.e... Incremental ANDing of PC-trees

produces immediate and incrementally improving upper/lower bounds for counts... PC-

trees contain 1-count for every quadrant of every dimension (they are data-mining

ready)... any sub-quadrant at any level is simple to extract (it need not be rebuilt)... PC-

trees can be combined to produce any needed data structure, including the original

data... K-nearest neighbor (KNN) classification method, the k-nearest neighbors (under

some distance metric), of the sample to be classified, are found by scanning the entire

data set);

'467 does not explicitly teach, " viewing …" of a closeness relationship between

said first data block opened and a second plurality of data blocks based on their

content, however as taught by '800 at col.2, lines 30-50 (i.e…. An information appliance

is disclosed which is divided into a CONTENT area for viewing and interacting directly

with the content of information units, which in the best mode implementation is further

divided into a three-by-three array of content sub-areas, and a base or monitor area

consisting of a CONTEXT area for identifying the immediate context of the information

displayed in the content area, an IDENTITY area for identifying and storing the history

of prior information contexts, and a DESIRE area for collecting and acting upon selected

units of information, in accordance with the desires of the user...).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have modified '800 into '467 to provide a way, wherein viewing a

closeness relationship between said first data block opened and a second plurality of

data blocks based on their content is included. One of the ordinary skill in the art would

have been motivated to modify this combination to provide an automated data analysis

techniques to uncover previously undetected relationships among data items, wherein

the organization of large datasets existing in n-dimensional arrays and, more

particularly, to the organization of the datasets into a bit-sequential format that facilitates

the establishment of a lossless, data-mining-ready data structure. The best known

examples of data mining applications are in database marketing, wherein an analysis of

the customer database, using techniques such as interactive querying to optimize

portfolios, and in production manufacturing, wherein production processes are

controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph

[0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 2, incorporate substantially similar subject matter

as cited in claim 1 above, and in further view of the following, and is similarly rejected

along the same rationale;

"... *based on a calculation of a distance function",* as taught by '467 at page 19

paragraph [0233] (i.e... often called a similarity function, such as distance...),

'467 does not explicitly teach, *"...and without traversing a hypertext link, and without subsequently accessing a prior search results page"*, however as taught by '800 at col.2, lines 30-50 (i.e.... An information appliance is disclosed which is divided into a CONTENT area for viewing and interacting directly with the content of information units, which in the best mode implementation is further divided into a three-by-three array of content sub-areas, and a base or monitor area consisting of a CONTEXT area for identifying the immediate context of the information displayed in the content area, an IDENTITY area for identifying and storing the history of prior information contexts, and a DESIRE area for collecting and acting upon selected units of information, in accordance with the desires of the user...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 to provide a way, wherein viewing a closeness relationship between said first data block opened and a second plurality of data blocks based on their content without traversing a hypertext link, and without subsequently accessing a prior search results page. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize

portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 3, *"each time a data block is accessed, building a proximity list indicating a closeness of another plurality of data blocks to the data block accessed currently, such that the user traverses data blocks horizontally to find a most relevant data block to information sought",* however as taught by '800 at col.2, lines 30-50 (i.e.... An information appliance is disclosed which is divided into a CONTENT area for viewing and interacting directly with the content of information units, which in the best mode implementation is further divided into a three-by-three array of content sub-areas, and a base or monitor area consisting of a CONTEXT area for identifying the immediate context of the information displayed in the content area, an IDENTITY area for identifying and storing the history of prior information contexts, and a DESIRE area for collecting and acting upon selected units of information, in accordance with the desires of the user...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 to provide a way, wherein each time a data block is accessed, building a proximity list indicating a closeness of another plurality of data blocks to the data block accessed currently, such that the user traverses data blocks horizontally to find a most relevant data block to information sought. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously

undetected relationships among data items, wherein the organization of large datasets

existing in n-dimensional arrays and, more particularly, to the organization of the

datasets into a bit-sequential format that facilitates the establishment of a lossless, data-

mining-ready data structure. The best known examples of data mining applications are

in database marketing, wherein an analysis of the customer database, using techniques

such as interactive querying to optimize portfolios, and in production manufacturing,

wherein production processes are controlled and scheduled to maximize profit, as

taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-

dimensional arrays...).

In regard to dependent claim 4, *"wherein N is a number of words or subjects in*

a selected corpus", as taught by '467 page 19, paragraph [0233] (i.e... Given a database

of n objects and k, the number of clusters to form, a partitioning technique organizes the

objects into k partitions (k n), where each partition represents a cluster. ....).

In regard to dependent claim 5, *"inputting, by a user, an input indicating a*

search to be performed the input including a collection of data blocks which are to be

indexed, said data blocks selectively containing data, metadata, and links to other data

blocks", however as taught by '800 at col. 15, line 65 through col.16, line 45 (i.e...

Selection of the Yellow Pages item 902 produces an alphabetical range presentation

shown in FIG. 9C. If the user is seeking "restaurants", that would be found in the

selection 903, "Photographers to Zoos". CLARIFICATION continues in FIG. 9D with the

selection 904 of "Recording to Restaurants" and in FIG. 9E with the selection 905 of

"Restaurant Equipment to Restaurants." Note that in FIG. 9F there are only four options

shown within the "Restaurant Equipment to Restaurants" range. Upon selection 906 of

"Restaurants" another alphabetical list--this time of restaurant names--appears as

shown on FIG. 9G....).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have modified '800 into '467 to provide a way, wherein inputting,

by a user, an input indicating a search to be performed the input including a collection of

data blocks which are to be indexed, said data blocks selectively containing data,

metadata, and links to other data blocks. One of the ordinary skill in the art would have

been motivated to modify this combination to provide an automated data analysis

techniques to uncover previously undetected relationships among data items, wherein

the organization of large datasets existing in n-dimensional arrays and, more

particularly, to the organization of the datasets into a bit-sequential format that facilitates

the establishment of a lossless, data-mining-ready data structure. The best known

examples of data mining applications are in database marketing, wherein an analysis of

the customer database, using techniques such as interactive querying to optimize

portfolios, and in production manufacturing, wherein production processes are

controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph

[0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 6, "*and a collection of text strings 1 to N is input,*

said text strings being used as search criteria in a spatial indexing process", as taught

by '467 page 19, paragraph [0233] (i.e... Given a database of n objects and k, the

number of clusters to form, a partitioning technique organizes the objects into k

partitions (k n), where each partition represents a cluster. ....).

'467 does not explicitly teach, *"wherein the user further inputs a search depth*

defining how many links are to be followed during a search process", however as taught

by '800 at col. 15, line 65 through col.16, line 45 (i.e.... FIG. 9A begins the sequence

with a display of "Interactive Computer Net, Inc.", which may be an Internet Service

whose selection 901 provides access to the Yellow Pages in Northern Virginia, as

shown in FIG. 9B. Selection of the Yellow Pages item 902 produces an alphabetical

range presentation shown in FIG. 9C. If the user is seeking "restaurants", that would be

found in the selection 903, "Photographers to Zoos". CLARIFICATION continues in FIG.

9D with the selection 904 of "Recording to Restaurants" and in FIG. 9E with the

selection 905 of "Restaurant Equipment to Restaurants." Note that in FIG. 9F there are

only four options shown within the "Restaurant Equipment to Restaurants" range. Upon

selection 906 of "Restaurants" another alphabetical list--this time of restaurant names--

appears as shown on FIG. 9G....).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have modified '800 into '467 to provide a way, wherein the user

further inputs a search depth defining how many links are to be followed during a search

process. One of the ordinary skill in the art would have been motivated to modify this

combination to provide an automated data analysis techniques to uncover previously

undetected relationships among data items, wherein the organization of large datasets

existing in n-dimensional arrays and, more particularly, to the organization of the

datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 7, *"creating, for each data block given as an input, an index record for storing search results which relate each said data block to each of the strings in the collection; and creating a global index record array which contains index records for each of the data blocks given as an input",* however as taught by '800 at col. 15, line 65 through col.16, line 45 (i.e.... FIG. 9A begins the sequence with a display of "Interactive Computer Net, Inc.",.... provides access to the Yellow Pages in Northern Virginia, as shown in FIG. 9B. Selection of the Yellow Pages item 902 produces an alphabetical range presentation shown in FIG. 9C. .... with the best mode of implementing the invention. The CONTENT portion 110 of the grid is composed of a three-by-three array of squares 104 ...... the seed atom (e.g. searching feature) described in connection with FIG. 10A. ...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 to provide a way, wherein creating, for each data block given as an input, an index record for storing search results which relate each said data block to each of the strings in the collection; and creating a global

index record array which contains index records for each of the data blocks given as an

input. One of the ordinary skill in the art would have been motivated to modify this

combination to provide an automated data analysis techniques to uncover previously

undetected relationships among data items, wherein the organization of large datasets

existing in n-dimensional arrays and, more particularly, to the organization of the

datasets into a bit-sequential format that facilitates the establishment of a lossless, data-

mining-ready data structure. The best known examples of data mining applications are

in database marketing, wherein an analysis of the customer database, using techniques

such as interactive querying to optimize portfolios, and in production manufacturing,

wherein production processes are controlled and scheduled to maximize profit, as

taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-

dimensional arrays...).

In regard to dependent claim 15, *"positioning, by the user, a search focus and*

directing coordinates of a search", as taught by '467 at page 19 paragraph [0233]

(i.e.... organizes the objects into k partitions (k n), where each partition represents a

cluster. The clusters are formed to optimize an objective partitioning criterion, often

called a similarity function, such as distance, so that the objects within a cluster are

"similar", whereas the objects of different clusters are "dissimilar" in terms of the

database attributes...).

In regard to dependent claim 16, *"....which shows a projection of the N-*

dimensional space into a plurality of dimensions", as taught by '467 page 1, paragraphs

[0006]-[0007] (i.e...The data to be organized is preferably in the form of an n-

dimensional array of binary data where the binary data is comprise of bits that are identified by a bit position within the n-dimensional array...);

'467 does not explicitly teach, *"providing a graphical user interface"*, however as taught by '800 at col. 20, lines 15-30 (i.e.... *providing a graphical user interface...).*

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 to provide a graphical user interface. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 23, incorporate substantially similar subject matter as cited in claim 1 above, and in further view of the following, and is similarly rejected along the same rationale;

'467 does not explicitly teach, *"...selectively providing documents with or without any inter-document links",* however as taught by '800 at col.2, lines 30-50 (i.e....

An information appliance is disclosed which is divided into a CONTENT area for viewing and interacting directly with the content of information units, which in the best mode implementation is further divided into a three-by-three array of content sub-areas, and a base or monitor area consisting of a CONTEXT area for identifying the immediate context of the information displayed in the content area, an IDENTITY area for identifying and storing the history of prior information contexts, and a DESIRE area for collecting and acting upon selected units of information, in accordance with the desires of the user...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 to provide a way, wherein selectively providing documents with or without any inter-document links. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

**Claims 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Perrizo US 20030009467A1- provisional No. 60/234,050 - filed 09/20/2000 –
(hereinafter '467), in view of Ridgley US006583800B1 - filed 07/14/1999 –
(hereinafter '800), further in view of Lipson et al. US006463426B1 - filed
10/26/1998 – (hereinafter '426).**

In regard to dependent claim 17, *"displaying the projection in three dimensions
obtained by first selecting all data blocks",* as taught by '467 page 3, paragraph [0044]
(i.e... each quadrant is partitioned into sub-quadrants and their 1-bit counts in raster
order constitute the children of the quadrant node. ... For instance, with 3-dimensional
data, each level is partitioned into octants and so on...).

'467 and '800 do not explicitly teach, *"...in the space which have a non-zero
value for coordinates (x, y, z), where x, y, and z are search criteria, and then by making
a value of all other coordinates equal to zero",* however as taught by '426 col.13,
lines 5-20 (i.e... three different axes of a Cartesian coordinate system represent three
different attributes, attribute 1, attribute 2 and attribute 3 of an image. Image regions
c.sub.1 -c.sub.8 and q.sub.1 -q.sub.8 are plotted along the axis. A distance between the
attributes in the query image and attributes in a candidate image are computed. The
sum of the distances between the points, c.sub.1 -c.sub.8 and q.sub.1 -q.sub.8 are
totaled and the minimum value is selected as the distance corresponding to the best
match. Thus the best match is defined as the image having the least amount of
deformation and with respect to the query image. The distance is computed as a

function of the properties of the query image and the properties of the candidate

image...).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have modified '426 into '467 and '800 to provide a way, wherein

the user further inputs a search defining in the space which have a non-zero value for

coordinates (x, y, z), where x, y, and z are search criteria, and then by making a value

of all other coordinates equal to zero. One of the ordinary skill in the art would have

been motivated to modify this combination to provide an automated data analysis

techniques to uncover previously undetected relationships among data items, wherein

the organization of large datasets existing in n-dimensional arrays and, more

particularly, to the organization of the datasets into a bit-sequential format that facilitates

the establishment of a lossless, data-mining-ready data structure. The best known

examples of data mining applications are in database marketing, wherein an analysis of

the customer database, using techniques such as interactive querying to optimize

portfolios, and in production manufacturing, wherein production processes are

controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph

[0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 18, "*displaying search results in a scatter-plot,*

thereby to reveal a geometric solid with dense and sparse areas, such that the solid is

oriented in the three axes, and points which are at the center are related to all three

subjects and such that points with a relatively high value in one axis, and relatively low

values in the remaining axes will contain data blocks which are relevant only to the term

relevant to the one axis, but not to terms relevant to the remaining axes", however as

taught by '426 col.13, lines 5-20, also see figure 3C sheet 7 of 30 (i.e... three different

axes of a Cartesian coordinate system represent three different attributes, attribute 1,

attribute 2 and attribute 3 of an image. Image regions c_1 -c_8 and q_1 -

q_8 are plotted along the axis. A distance between the attributes in the query image

and attributes in a candidate image are computed. The sum of the distances between

the points, c_1 -c_8 and q_1 -q_8 are totaled and the minimum value is

selected as the distance corresponding to the best match. Thus the best match is

defined as the image having the least amount of deformation and with respect to the

query image. The distance is computed as a function of the properties of the query

image and the properties of the candidate image. The function used can be, for

example, the absolute difference between the property of the ith query image

(denoted as prop(q_i)) and the property of the jth candidate image (denoted as

prop(c_j)) multiplied by a weight value...*).*

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have modified '426 into '467 and '800 to provide a way, wherein

displaying search results in a scatter-plot, thereby to reveal a geometric solid with dense

and sparse areas, such that the solid is oriented in the three axes, and points which are

at the center are related to all three subjects and such that points with a relatively high

value in one axis, and relatively low values in the remaining axes will contain data

blocks which are relevant only to the term relevant to the one axis, but not to terms

relevant to the remaining axes. One of the ordinary skill in the art would have been

motivated to modify this combination to provide an automated data analysis techniques

to uncover previously undetected relationships among data items, wherein the

organization of large datasets existing in n-dimensional arrays and, more particularly, to

the organization of the datasets into a bit-sequential format that facilitates the

establishment of a lossless, data-mining-ready data structure. The best known

examples of data mining applications are in database marketing, wherein an analysis of

the customer database, using techniques such as interactive querying to optimize

portfolios, and in production manufacturing, wherein production processes are

controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph

[0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 19, incorporate substantially similar subject

matter as cited in claim 18 above, and in further view of the following, and is similarly

rejected along the same rationale;

"wherein most significant Web pages are displayed in a most densely populated

area....a user navigates documents in the scatter-plot using a hand-held input

mechanism", however as taught by '800 at col. 5, lines 55-60 (i.e... grid layout of a user

interface in accordance with the best mode of implementing the invention. The

CONTENT portion 110 of the grid is composed of a three-by-three array of squares 104.

Arrays of other dimensions may be used in implementing the invention. Square arrays

(i.e. n.times.n arrays, where "n" is a positive integer) are advantageous for a user

information interface because of the symmetry of spatial relationships. Rectangular

arrays (i.e. m.times.n arrays, where "m" and "n" are positive integers and "m" is not

equal to "n") are also usable for the CONTENT area. A three-by-three array is believed optimal because of the simplicity of its symmetry, and because a three-by-three array is very familiar to the vast majority of users who have used three-by-three arrays in such varied forms as a telephone keypad or numeric keypad (the numbers 1-9).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 and '426 to provide a way, wherein user navigates documents in the scatter-plot using a hand-held input mechanism, which is the most significant Web pages are displayed in a most densely populated area. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 20," *wherein said hand-held input mechanism comprises at least one of a mouse, a touchpad, a light pointer, a keyboard, and a joy stick*", however as taught by '800 at col. 5, lines 55-60 (i.e... a telephone keypad or numeric keypad (the numbers 1-9)...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 and '426 to provide a way, wherein user navigates documents in the scatter-plot using a hand-held input mechanism, which embedded a touchpad. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 21, incorporate substantially similar subject matter as cited in claim 18 above, and in further view of the following, and is similarly rejected along the same rationale;

"...changing a current position and a proximity list", however as taught by '800 at col. 2, lines 55-60 (i.e... FIG. 10A is a representation of a "seed atom" concept for thinking and intelligence; FIG. 10B is a schematic for an information appliance using a circular motif...).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 and '426 to provide a way, wherein user navigates documents by changing a current position and a proximity list. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

In regard to dependent claim 22, "*during a spatial search, the user positions the current position in a center of the most densely populated area",* however as taught by '800 at col. 5, lines 55-60 (i.e... grid layout of a user interface in accordance with the best mode of implementing the invention. The CONTENT portion 110 of the grid is composed of a three-by-three array of squares 104. Arrays of other dimensions may be used in implementing the invention. Square arrays (i.e. n.times.n arrays, where "n" is a positive integer) are advantageous for a user information interface because of the symmetry of spatial relationships. Rectangular arrays (i.e. m.times.n arrays, where "m" and "n" are positive integers and "m" is not equal to "n") are also usable for the

CONTENT area. A three-by-three array is believed optimal because of the simplicity of its symmetry, and because a three-by-three array is very familiar to the vast majority of users who have used three-by-three arrays in such varied forms as a telephone keypad or numeric keypad (the numbers 1-9).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified '800 into '467 and '426 to provide a way, wherein during a spatial search, the user positions the current position in a center of the most densely populated area. One of the ordinary skill in the art would have been motivated to modify this combination to provide an automated data analysis techniques to uncover previously undetected relationships among data items, wherein the organization of large datasets existing in n-dimensional arrays and, more particularly, to the organization of the datasets into a bit-sequential format that facilitates the establishment of a lossless, data-mining-ready data structure. The best known examples of data mining applications are in database marketing, wherein an analysis of the customer database, using techniques such as interactive querying to optimize portfolios, and in production manufacturing, wherein production processes are controlled and scheduled to maximize profit, as taught by '467 at page 1, paragraph [0002]-[0003] (i.e... datasets existing in n-dimensional arrays...).

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pan et al   US006012053A   filed 06/23/1997

Chithambaram et al   US006674445B1   filed 07/31/2000

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Quoc A. Tran whose telephone number is (571) 272-

4103. The examiner can normally be reached on Monday through Friday from 8:30AM

to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph H. Feild can be reached on (571) 272-4090. The fax phone number

for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Quoc A. Tran
Patent Examiner
Technology Center 2176
March 11, 2005

SANJIV SHAH
PRIMARY EXAMINER